

## **PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For: SUBSTITUTED PYRAZOLINE COMPOUNDS  
THEIR PREPARATION AND USE AS  
MEDICAMENTS

## **INFORMATION DISCLOSURE STATEMENT**

U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop New Application  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

Pursuant to 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §1.97, Applicants submit herewith one Form PTO-1449 identifying information for the Examiner's consideration. Copies of the cited non US Patent documents are attached.

If the Patent and Trademark Office determines that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

## **BANNER & WITCOFF, LTD.**

Date: July 27, 2007

By: Benjamin C. Spehlmann  
Registration No. 45,649

Banner & Witcoff, Ltd.  
Customer No. 22907

BCS/mhn

<p>USPTO Form 1449 U.S. Department of Commerce Patent and Trademark Office <b>INFORMATION DISCLOSURE</b> <b>CITATION</b> Sheet 1 of 1</p>			Attorney Docket No. 006444.00052		Serial No. 10/589,744		
			Applicant(s): CUBERES ALTISEN et al				
			Filing Date: August 17, 2006			Group: TBA	
<b>U.S. PATENT DOCUMENTS</b>							
Examiner Initial	Patent No.	Date	Name	Class	Subclass	Filing Date (if appropriate)	
	US 2005/0171179	08-04-2005	Lange et al				
	US 2005/0282798	12-22-2005	Lazzari et al				
	US 2006/0128673	06-15-2006	Firnges et al				
	US 6,956,033 B2	10-18-2005	Ogawa et al				
	US 2005/0137251	06-23-2005	Garzon et al				
	US 6,610,737 B1	08-26-2003	Garzon et al				
	US 2006/194843	08-31-2006	Berdini et al				
	US 6,509,367 B1	01-21-2003	Martin et al				
	US 2004/0092535	05-13-2004	Barsanti et al				
	US 2005/0222138	10-06-2005	Ohhata et al				
	US 2005/0052315	03-09-2006	Leung et al				
	US 2006/0172019	08-03-2006	Ralston et al				
	US 2002/0156104	10-24-2002	Adams et al				
	US 2003/0153569	08-14-2003	Adams et al				
	US 2006/0106014	05-18-2006	Boddupalli et al				
	US 2002/0058816	05-16-2002	Kordik et al				
<b>FOREIGN PATENT DOCUMENTS</b>							
Examiner Initial	Document No.	Date	Country	Class	Subclass	Translation	
						YES	NO
	WO 02/080909 A	17 October 2002	PCT				
	WO 88/06583 A	7 September 1988	PCT				
	WO 92/03421 A	5 March 1992	PCT				
	JP 02 117605 A	2 May 1990	JAPAN				
	WO2006077428 A1	07-27-2006	PCT				
	WO2006077425 A1	07-27-2006	PCT				
	WO2004078261 A1	09-16-2004	PCT				
	WO2004060882 A1	07-22-2004	PCT				
	WO2006077419 A1	07-27-2006	PCT				
	WO2006077414	07-27-2006	PCT				
	WO 00/76503 A1	12-21-00	PCT				
	GB 1 2089326 A	21 Oct. 1970	Great Britain				
	EP 1 384 477 A	28 Jan. 2004	Europe				
	WO 88/05046	14 July 1988	PCT				

## INFORMATION DISCLOSURE

## CITATION

Sheet 1 of 1

Attorney Docket No.  
006444.00052Serial No.  
10/589,744

Applicant(s): CUBERES ALTISEN et al

Filing Date: even herewith

Group: TBA

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

	DATABASE CAPLUS 'Online!CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 9 April 1991 XP002335745 retrieved from STN accession no. 1991:77052
	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 19 October 2001 XP002335857 retrieved from STN Database accession no. 2001-915250
	D.M.T. CHAN ET AL: "N-substituted pyrazoline-type insecticides" ACS SYMPOSIUM SERIES, no. 800, 2002, pages 144-155
	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, 10 January 2003 XP002335858 retrieved from STN Database accession no. 1993:2433
	G.A. MEIER ET AL: "Insecticidal dihydropyrazoles with reduced lipophilicity" ACS SYMPOSIUM SERIES, no. 504, 1992, pages 313-326
	DATABASE CAPLUS "Online! Chemical abstracts service, Columbus, Ohio; 22 April 2001 XP002335859 retrieved from STN Database accession no.1958;40527
	W.L. MEYER ET AL: "1,5-DIARYL-2, 3-Pyrrolidinediones, X, Phenylhydrazine derivatives" JOURNAL OF ORGANIC chemistry., VOL22, 1957, PAGES 1565-1567 AMERICAN CHEMICAL SOCIETY
	International Search Report mailed July 29, 2005 in International Application No. PCT/EP2005/001659
	Kenji Tamura et al., "One-Pot Synthesis of Trifluoroacetimidoyl Halides", J. Org. Chem. 1993, 58, 32-38
	Hollister, L. E., "Health Aspects of Cannabis," Pharmacological Reviews, Vol. 38, No. 1, pp. 1-20 (1986)
	Murphy, L. et al., Consroe and Sandyk, "Potential Role of Cannabinoids for Therapy of Neurological Disorders," pp. 459-524, CRC Press (1992)
	Slavinska, V. et al., "New Way for the Preparation of 4-Phenyl-2-Oxobutyric Acid Ethyl Ester," Synthetic Communications, 26(11), 2229-2233 (1996)
	Dujardin, G. et al., "A Straightforward Route to E- $\gamma$ -Aryl- $\alpha$ -oxobutenoic Esters by One-step Acid-catalysed Crotonisation of Pyruvates," Synlett, No. 1, pp. 147-149 (2001)
	Pascual, Alfons, "Synthese des 5-[(Acetylhydrazone)-(4-chlorphenyl)-methyl]thiophen-2-yl-esters der Trifluormethansulfonsäure," J. Prakt. Chem. 341, No. 7, pp. 695-700 (1999)
	Lin, S. et al., "Regioselective Friedel-Crafts Acylation with Unsymmetrically Substituted Furandicarboxylic Acid Anhydride and Furan Acid Chloride: Syntheses of 4-Substituted 3-Arylcarbonyl-2-Phenylfuran and 3-Substituted 4-Arylcarbonyl-2-Phenylfuran," Heterocycles, Vol. 55, No. 2, pp. 265-277 (2001)
	Rao, P. D. et al., "Rational Syntheses of Porphyrins Bearing up to Four Different Meso Substituents," J. Org. Chem., 65, pp. 7323-7344 (2000)
	Pearson, D.E. and Buehler, C.A., "Friedel-Crafts Acylations with Little or No Catalyst," Synthesis, No. 10: October, pp. 533-542 (1972)
	Ross, Ruth A. et al., "Agonist-inverse agonist characterization at CB <sub>1</sub> and CB <sub>2</sub> cannabinoid receptors of L-759633, L759656 and AM630," British Journal of Pharmacology 126, pp. 665-672 (1999)
	Howlett, A.C. et al., "International Union of Pharmacology XXVII. Classification of Cannabinoid Receptors," Pharmacological Reviews 54:161-202 (2002)
	Compton, David R. et al., "In-Vivo Characterization of a Specific Cannabinoid Receptor Antagonist (SR141716A): Inhibition of $\Delta^9$ -Tetrahydrocannabinol-Induced Responses and Apparent Agonist Activity," The Journal of Pharmacology and Experimental Therapeutics, Vol. 277, No. 2, 277:586-594 (1996)
	Woolfe G. et al., "The Evaluation of the Analgesic Action of Pethidine Hydrochloride (Demerol)," The Journal of Pharmacology and Experimental Therapeutics, Vol. 80, pp. 300-307 (1944)
	Desmedt L.K.C. et al. "Anticonvulsive Properties of Cinnarizine and Flunarizine in Rats and Mice," Arzneim.-Forsch. (Drug Res.) 25, Nr. 9, pp. 1408-1413 (1975)
	G. Colombo et al., "Appetite Suppression and Weight Loss after the Cannabinoid Antagonist SR 141716," Life Sciences, Vol. 63, No. 8 pp. PL 113-117 (1998)
	Alpermann, H.G. et al. "Pharmacological Effects of Hoe 249: A New Potential Antidepressant," Drug Development Research 25:267-282 (1992)
	Lange, Jos H.M. et al., Bioorganic & Medical Chemistry Letters, 2005, Vol.15, No.21, 4794-4798
	Muccioli, G.G. et al., Expert opinion on Therapeutic Patents, 2006, Vol. 16, No. 10, 1405-1423
	Thomas, B.F. et al, Bioorganic & Medicinal Chem., 2005, Vol. 13, No. 18, 5463-5774
	International Search Report mailed June 14, 2005 in International Application No. PCT/EP2005/001465
	International Preliminary Report on Patentability in International Application PCT/EP2005/001659 mailed April 12, 2006

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

JUL 27 2007

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

3

Complete if Known	
Application Number	TBA
Filing Date	April 7, 2006
First Named Inventor	Rosa CUBERES ALTISEN
Art Unit	TBA
Examiner Name	TBA
Attorney Docket Number	006444.00045 X

JUL 27 2007

U.S. PATENT DOCUMENTS					
Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
		US- 2005/0171179 A1	08/04/2005	Lange et al.	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
X		WO 02/080909 A1	10-17-2002	Laboratorios Del Dr. Esteve, S.A.		
X		WO 88/06583	07-09-1988	E.I. Dupont De Nemours and Company		
X		JP 02 117 605 A (XP002335745)	10-26-1988	Nippon Nohyaku Co. Ltd.		
X		WO 92/03421	03-05-1992	E.I. Dupont De Nemours and Company		
		WO 00/76503 A1	12/21/00	Temple University – of the Commonwealth System of Higher Education		

## OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		International Search Report mailed July 29, 2005 in International Application No. PCT/EP2005/001659	
		Chan et al., "N-substituted Pyrazoline-type Insecticides", ACS Symposium Series, no. 800, p. 144-155 (2002); Chem. Abstr. XP002335857	✓
		Meier et al., "Insecticidal Dihydropyrazoles with Reduced Lipophilicity", ACS Symposium Series, no. 504 p. 313-326 (1992); Chem Abstr. XP002335858	✓
		Meyer et al., "1,5-Diaryl-2,3-pyrrolidinediones – Phenylhydrazine Derivatives", Journal of Organic Chemistry, Vol. 22: 1565-1567 (1957); Chem Abstr. XP002335859	X

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

2

of

3

## Complete if Known

Application Number	TBA
Filing Date	April 7, 2006
First Named Inventor	Rosa CUBERES ALTISEN
Art Unit	TBA
Examiner Name	TBA

Attorney Docket Number 006444.00045

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		International Search Report mailed July 29, 2005 in International Application No. PCT/EP2005/001659	X
		Kenji Tamura et al., "One-Pot Synthesis of Trifluoroacetimidoyl Halides", J. Org. Chem. 1993, 58, 32-38	
		Hollister, L. E., "Health Aspects of Cannabis," Pharmacological Reviews, Vol. 38, No. 1, pp. 1-20 (1986)	
		Murphy, L. et al., Consroe and Sandyk, "Potential Role of Cannabinoids for Therapy of Neurological Disorders," pp. 459-524, CRC Press (1992)	
		Slavinska, V. et al., "New Way for the Preparation of 4-Phenyl-2-Oxobutyric Acid Ethyl Ester," Synthetic Communications, 26(11), 2229-2233 (1996)	
		Dujardin, G. et al., "A Straightforward Route to E- $\gamma$ -Aryl- $\alpha$ -oxobutenoic Esters by One-step Acid-catalysed Crotonisation of Pyruvates," Synlett, No. 1, pp. 147-149 (2001)	
		Pascual, Alfons, "Synthese des 5-[(Acetylhydrazone)-(4-chlorphenyl)-methyl]thiophen-2-yl-esters der Trifluormethansulfonsäure," J. Prakt. Chem. 341, No. 7, pp. 695-700 (1999)	
		Lin, S. et al., "Regioselective Friedel-Crafts Acylation with Unsymmetrically Substituted Furandicarboxylic Acid Anhydride and Furan Acid Chloride: Syntheses of 4-Substituted 3-Arylcarbonyl-2-Phenylfuran and 3-Substituted 4-Arylcarbonyl-2-Phenylfuran," Heterocycles, Vol. 55, No. 2, pp. 265-277 (2001)	
		Rao, P. D. et al., "Rational Syntheses of Porphyrins Bearing up to Four Different Meso Substituents," J. Org. Chem., 65, pp. 7323-7344 (2000)	
		Pearson, D.E. and Buehler, C.A., "Friedel-Crafts Acylations with Little or No Catalyst," Synthesis, No. 10: October, pp. 533-542 (1972)	
		Ross, Ruth A. et al., "Agonist-inverse agonist characterization at CB <sub>1</sub> and CB <sub>2</sub> cannabinoid receptors of L-759633, L759656 and AM630," British Journal of Pharmacology 126, pp. 665-672 (1999)	
		Howlett, A.C. et al., "International Union of Pharmacology XXVII. Classification of Cannabinoid Receptors," Pharmacological Reviews 54:161-202 (2002)	
		Compton, David R. et al., "In-Vivo Characterization of a Specific Cannabinoid Receptor Antagonist (SR141716A): Inhibition of $\Delta^9$ -Tetrahydrocannabinol-Induced Responses and Apparent Agonist Activity," The Journal of Pharmacology and Experimental Therapeutics, Vol. 277, No. 2, 277-286-594 (1996)	
		Woolfe G. et al., "The Evaluation of the Analgesic Action of Pethidine Hydrochloride (Demerol)," The Journal of Pharmacology and Experimental Therapeutics, Vol. 80, pp. 300-307 (1944)	

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		<i>Application Number</i>	TBA
<i>(Use as many sheets as necessary)</i>		<i>Filing Date</i>	April 7, 2006
		<i>First Named Inventor</i>	Rosa CUBERES ALTISEN
		<i>Art Unit</i>	TBA
		<i>Examiner Name</i>	TBA
Sheet	3	of	3
		<i>Attorney Docket Number</i>	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*